



PATENT

Docket No.: 19603/4261 (CRF D-2895-02)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Lei et al.

Serial No. : 10/662,914

Cnfrm. No. : 2510

Filed : September 15, 2003

For : USING MUTATIONS TO IMPROVE  
ASPERGILLUS PHYTASES

Examiner:  
Mohammad Meah

Art Unit:  
1652

INFORMATION DISCLOSURE STATEMENT  
UNDER 37 CFR §§ 1.97-1.98

Mail Stop RCE

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 CFR §§ 1.97-1.98, applicant hereby brings to the attention of the United States Patent and Trademark Office, the references listed on the attached PTO/SB/08 form. The pertinence of Reference Cite No. 174 is indicated in the Supplementary Partial European Search Report (copy enclosed), for the corresponding European patent application. Some of the references listed on the search report are not listed on the attached PTO/SB/08 because they are already of record.

Pursuant to 37 CFR § 1.98(a)(2)(ii), copies of the cited U.S. Patents and U.S. Patent Application Publications (i.e. Reference Cite Nos. 1-71) are not enclosed. Copies of all other references cited (i.e. Reference Cite Nos. 72-174) are enclosed herewith.

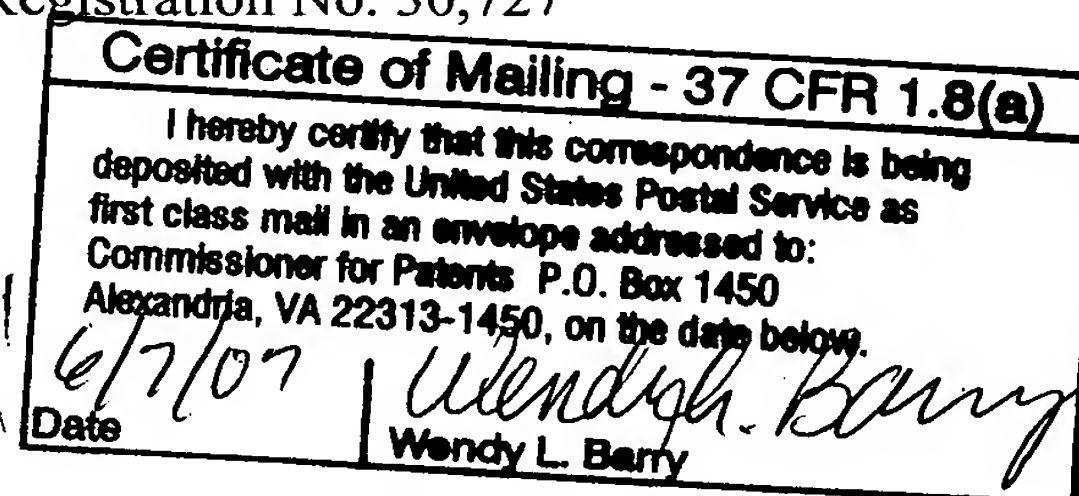
Respectfully submitted,

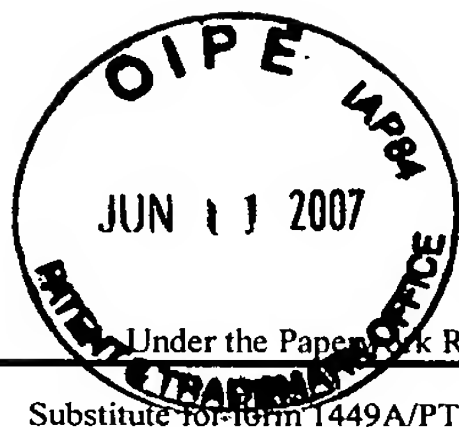
Date: June 7, 2007

Michael L. Goldman  
Registration No. 30,727

NIXON PEABODY LLP  
Clinton Square, P.O. Box 31051  
Rochester, New York 14603-1051  
Telephone: (585) 263-1304  
Facsimile: (585) 263-1600

10606670.1





PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				Application Number	10/662,914
				Filing Date	September 15, 2003
				First Named Inventor	LEI et al.
				Art Unit	1652
				Examiner Name	Mohammed Meah
				Attorney Docket Number	19603/4261 (CRF D-2895-02)
Sheet	1	of	8		
<b>U.S. PATENT DOCUMENTS</b>					
Examiner Initials <sup>6</sup>	Cite No. <sup>1</sup>	U.S. Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code <sup>2</sup> (if known)			
	1	US-2001/0018197 A1	08-30-2001	WONG et al.	
	2	US-2001/0029042 A1	10-11-2001	FOUACHE et al.	
	3	US-2003/0206913 A1	11-06-2003	WEBEL et al.	
	4	US-2005/0095691 A1	05-05-2005	LEI	
	5	US-2006/0153902 A1	07-13-2006	LEI	
	6	US-3,819,528	06-25-1974	BERRY	
	7	US-3,860,484	01-14-1975	O'MALLEY	
	8	US-3,966,971	06-29-1976	MOREHOUSE et al.	
	9	US-4,038,140	07-26-1977	JAWOREK et al.	
	10	US-4,375,514	03-01-1983	SIEWERT et al.	
	11	US-4,460,683	07-17-1984	GLOGER et al.	
	12	US-4,470,968	09-11-1984	MITRA et al.	
	13	US-4,734,283	03-29-1988	SIRÉN	
	14	US-4,765,994	08-23-1988	HOLMGREN	
	15	US-4,778,761	10-18-1988	MIYANOHARA et al.	
	16	US-4,914,029	04-03-1990	CARANSA et al.	
	17	US-4,915,960	04-10-1990	HOLMGREN	
	18	US-4,950,609	08-21-1990	TISCHER et al.	
	19	US-4,997,767	03-05-1991	NOZAKI et al.	
	20	US-5,024,941	06-18-1991	MAINE et al.	
	21	US-5,200,399	04-06-1993	WETTLAUFER et al.	
	22	US-5,268,273	12-07-1993	BUCKHOLZ	
	23	US-5,290,765	03-01-1994	WETTLAUFER et al.	
	24	US-5,316,770	05-31-1994	EDWARDS, JR.	
	25	US-5,318,903	06-07-1994	BEWERT et al.	
	26	US-5,366,736	11-22-1994	EDWARDS, JR.	
	27	US-5,480,790	01-02-1996	TISCHER et al.	
	28	US-5,492,821	02-20-1996	CALLSTROM et al.	
	29	US-5,516,525	05-14-1996	EDWARDS, JR.	
	30	US-5,554,399	09-10-1996	VANDERBEKE et al.	
	31	US-5,556,771	09-17-1996	SHEN et al.	
	32	US-5,612,055	03-18-1997	BEDFORD et al.	
	33	US-5,691,154	11-25-1997	CALLSTROM et al.	
	34	US-5,716,655	02-10-1998	HAMSTRA et al.	
	35	US-5,736,625	04-07-1998	CALLSTROM et al.	
	36	US-5,827,709	10-27-1998	BARENDSE et al.	
	37	US-5,830,696	11-03-1998	SHORT	
	38	US-5,830,733	11-03-1998	NEVALAINEN et al.	
	39	US-5,853,779	12-29-1998	TAKEBE et al.	
	40	US-5,876,997	03-02-1999	KRETZ	
Examiner Signature				Date Considered	

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at 222.uspto.gov or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>			
				Application Number		10/662,914	
				Filing Date		September 15, 2003	
				First Named Inventor		LEI et al.	
				Group Art Unit		1652	
				Examiner Name		Mohammed Meah	
Sheet	2	of	8	Attorney Docket Number		19603/4261 (CRF D-2895-02)	
<b>U.S. PATENT DOCUMENTS</b>							
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	
		Number - Kind Code <sup>2</sup> (if known)					
	41	US-5,891,708		04-06-1999	SANIEZ et al.		
	42	US-5,900,525		05-04-1999	AUSTIN-PHILLIPS et al.		
	43	US-5,902,615		05-11-1999	SANIEZ et al.		
	44	US-5,935,624		08-10-1999	DELUCA et al.		
	45	US-5,955,448		09-21-1999	COLACO et al.		
	46	US-5,972,669		10-26-1999	HARZ et al.		
	47	US-5,985,605		11-16-1999	CHENG et al.		
	48	US-5,989,600		11-23-1999	NIELSEN et al.		
	49	US-6,022,555		02-08-2000	DELUCA et al.		
	50	US-6,039,942		03-21-2000	LASSEN et al.		
	51	US-6,063,431		05-16-2000	BAE et al.		
	52	US-6,083,541		07-04-2000	HAMSTRA et al.		
	53	US-6,110,719		08-29-2000	KRETZ		
	54	US-6,139,892		10-31-2000	FREDLUND et al.		
	55	US-6,139,902		10-31-2000	KONDO et al.		
	56	US-6,140,077		10-31-2000	NAKAMURA et al.		
	57	US-6,183,740 B1		02-06-2001	SHORT et al.		
	58	US-6,190,897 B1		02-20-2001	KRETZ		
	59	US-6,204,012 B1		03-20-2001	HELLMUTH et al.		
	60	US-6,248,938 B1		06-19-2001	AUSTIN-PHILLIPS et al.		
	61	US-6,261,592 B1		07-17-2001	NAGASHIMA et al.		
	62	US-6,264,946 B1		07-24-2001	MÜLLERTZ et al.		
	63	US-6,274,178 B1		08-14-2001	BEVEN et al.		
	64	US-6,277,623 B1		08-21-2001	OH et al.		
	65	US-6,284,502 B1		09-04-2001	MAENZ et al.		
	66	US-6,291,221 B1		09-18-2001	VAN LOON et al.		
	67	US-6,451,572 B1		09-17-2002	LEI		
	68	US-6,511,699 B1		01-28-2003	LEI		
	69	US-6,841,370 B1		01-11-2005	LEI		
	70	US-6,974,690 B2		12-13-2005	LEI		
	71	US-7,026,150 B2		04-11-2006	LEI		
<b>FOREIGN PATENT DOCUMENTS</b>							
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
	72	CN 1126243 A		07-10-1996	MITCHELL et al.		
	73	EP 0 449 376 A2		10-02-1991	PEN et al.		
	74	EP 0 556 883 A1		08-25-1993	HAMSTRA et al.		
	75	EP 0 649 600 A1		04-26-1995	TAKEBE et al.		
	76	EP 0 699 762A2		03-06-1996	MOCHIZUKI et al.		
Examiner Signature					Date Considered		

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at 222.uspto.gov or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO				<b>Complete if Known</b>			
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>				Application Number	10/662,914		
				Filing Date	September 15, 2003		
				First Named Inventor	LEI et al.		
				Art Unit	1652		
				Examiner Name	Mohammed Meah		
Sheet	3	of	8	Attorney Docket Number	19603/4261 (CRF D-2895-02)		
<b>FOREIGN PATENT DOCUMENTS</b>							
Examiner Initials <sup>2</sup>	Cite No. <sup>1</sup>	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup>	Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
	77	EP 0 772 978 B1		05-14-1997	BENDIXEN et al.		
	78	EP 0 779 037 A1		06-18-1997	VAN PARIDON et al.		
	79	EP 0 897 010 A2		02-17-1999	KOSTREWA et al.		
	80	EP 0 897 985 A2		02-24-1999	LEHMANN, Martin		
	81	EP 0 909 821 A2		04-21-1999	BORNSCHEUER et al.		
	82	EP 0 925 723 A1		06-30-1999	BUURMAN et al.		
	83	EP 0 955 362 A1		11-10-1999	NAGASHIMA et al.		
	84	EP 0 960 934 A1		12-01-1999	NAGASHIMA et al.		
	85	GB 2 286 396 A		08-16-1995	WILLIAMS, Peter		
	86	GB 2 316 082A		02-18-1998	APAJALAHTI et al.		
	87	WO 90/03431 A1		04-05-1990	BRIERLEY et al.		
	88	WO 90/05182 A1		05-17-1990	GIBSON et al.		
	89	WO 91/14773 A2		10-03-1991	GIBSON et al.		
	90	WO 91/14782 A1		10-03-1991	PEN et al.		
	91	WO 93/14645 A1		08-05-1993	HAMSTRA et al.		
	92	WO 93/16175 A1		08-19-1993	BARENDSE et al.		
	93	WO 93/19759 A1		10-14-1993	EDWARDS et al.		
	94	WO 94/03072 A1		02-17-1994	PALOHEIMO et al.		
	95	WO 94/03612 A1		02-17-1994	NEVALAINEN et al.		
	96	WO 97/16076 A1		05-09-1997	GIBSON et al.		
	97	WO 97/35017 A1		09-25-1997	BERKA et al.		
	98	WO 97/39638 A1		10-30-1997	MÜLLERTZ et al.		
	99	WO 97/45009 A2		12-04-1997	BRONSHTEIN		
	100	WO 97/48812 A3		12-24-1997	CHENG et al.		
	101	WO 98/05785 A1		02-12-1998	MAUGENEST et al.		
	102	WO 98/06856 A1		02-19-1998	APAJALAHTI et al.		
	103	WO 98/20139 A2		05-14-1998	MORGAN et al.		
	104	WO 98/30681 A1		07-16-1998	OHMANN et al.		
	105	WO 98/44125 A1		10-08-1998	OH et al.		
	106	WO 98/54980 A2		12-10-1998	BARENDSE et al.		
	107	WO 99/08539 A1		02-25-1999	KRETZ, Keith		
	108	WO 99/49740 A1		10-07-1999	BEUDEKER et al.		
	109	WO 00/10404 A2		03-02-2000	MAENZ et al.		
	110	WO 00/20569 A1		04-13-2000	HENRIKSEN et al.		
	111	WO 00/41509 A2		07-20-2000	YAVER et al.		
	112	WO 00/47060 A1		08-17-2000	ANDELA et al.		
	113	WO 00/58481 A2		10-05-2000	LEI		
	114	WO 00/71728 A1		11-30-2000	SHORT et al.		
	115	WO 00/72700 A1		12-07-2000	BARCLAY et al.		
	116	WO 01/36607 A1		05-25-2001	LEI		
	117	WO 01/58275 A2		08-16-2001	OESTERGAARD et al.		
	118	WO 01/58276 A2		08-16-2001	KLUENTER et al.		
Examiner Signature					Date Considered		

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at 222.uspto.gov or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)				Application Number	
				10/662,914	
				Filing Date	
				September 15, 2003	
				First Named Inventor	
		LEI et al.			
Group Art Unit		1652			
Examiner Name		Mohammed Meah			
Attorney Docket Number		19603/4261 (CRF D-2895-02)			
Sheet	4	of	8		
<b>OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS</b>					
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T <sup>2</sup>
	119	ATLUNG et al., "Role of the Transcriptional Activator AppY in Regulation of the <i>cyx appA</i> Operon of <i>Escherichia coli</i> by Anaerobiosis, Phosphate Starvation, and Growth Phase," <i>J. Bacteriol.</i> 176(17):5414-5422 (1994)			
	120	ATCC Catalog for Yeasts, 19 <sup>th</sup> Edition (1995)			
	121	BELIN et al., "A Pleiotropic Acid Phosphatase-Deficient Mutant of <i>Escherichia coli</i> Shows Premature Termination in the <i>dsbA</i> Gene. Use of <i>dsbA::phoA</i> Fusions to Localize a Structurally Important Domain in DsbA," <i>Mol. Gen. Genet.</i> 242:23-32 (1994)			
	122	BLONDEAU et al., "Development of High-Cell-Density Fermentation for Heterologous Interleukin 1 $\beta$ Production in <i>Kluyveromyces lactis</i> Controlled by the PHO5 Promoter," <i>Appl. Microbiol. Biotechnol.</i> 41:324-329 (1994)			
	123	BOCTOR et al., "Enhancement of the Stability of Thrombin by Polyols: Microcalorimetric Studies," <i>J. Pharm. Pharmacol.</i> 44:600-603 (1992)			
	124	BOER et al., "Characterization of <i>Trichoderma reesei</i> Cellobiohydrolase Cel7a Secreted from <i>Pichia pastoris</i> Using Two Different Promoters," <i>Biotechnol. Bioengin.</i> 69(5):486-494 (2000)			
	125	BRONDSTED et al., "Effect of Growth Conditions on Expression of the Acid Phosphatase ( <i>cyx-appA</i> ) Operon and the <i>appY</i> Gene, Which Encodes a Transcriptional Activator of <i>Escherichia coli</i> ," <i>J. Bacteriol.</i> 178(6):1556-1564 (1996)			
	126	CHIARUGI et al., "Differential Role of Four Cysteines on the Activity of a Low <i>M<sub>r</sub></i> Phosphotyrosine Protein Phosphatase," <i>FEBS Lett.</i> 310(1):9-12 (1992)			
	127	DASSA et al., "Identification of the Gene <i>appA</i> for the Acid Phosphatase (pH Optimum 2.5) of <i>Escherichia coli</i> ," <i>Mol. Gen. Genet.</i> 200:68-73 (1985)			
	128	DASSA et al., "The Complete Nucleotide Sequence of the <i>Escherichia coli</i> Gene <i>appA</i> Reveals Significant Homology Between pH 2.5 Acid Phosphatase and Glucose-1-Phosphatase," <i>J. Bacteriol.</i> 172(9):5497-5500 (1990)			
	129	DATABASE ACCESSION NO. B36733, corresponding to Greiner et al., <i>Arch. Biochem. Biophys.</i> 303:107-113 (1993)			
	130	DIVAKARAN et al., "In vitro Studies on the Interaction of Phytase with Trypsin and Amylase Extracted from Shrimp ( <i>Penaeus vannamei</i> ) Hepatopancreas," <i>J. Agric. Food Chem.</i> 46:4973-4976 (1998)			
Examiner Signature				Date Considered	

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)				Application Number	10/662,914
				Filing Date	September 15, 2003
				First Named Inventor	LEI et al.
				Group Art Unit	1652
				Examiner Name	Mohammed Meah
Sheet	5	of	8	Attorney Docket Number	19603/4261 (CRF D-2895-02)
<b>OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS</b>					
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T <sup>2</sup>
	131	DSM Nutritional Products, Opposition Brief for European Patent No. EP 1-090-129 (10 pages) (November 15, 2006)			
	132	GOLOVAN et al., "Characterization and Overproduction of the E. coli appA Encoded Biofunctional Enzyme the Exhibits Both Phytase and Acid Phosphatase Activities," <i>Can. J. Microbiol.</i> 46:59-71 (2000)			
	133	GRANOVSKII et al., "Expression of Hepatitis B Virus HBsAg Gene in Yeast Cells Under Control of Promotor Region of PHO5 Gene," <i>Soviet Progress in Virology</i> 5:45-47 (1985)			
	134	GREINER et al., "Purification and Characterization of a Phytase from Klebsiella terrigena," <i>Arch. Biochem. Biophys.</i> 341(2):201-206 (1997)			
	135	GREINER et al., "Purification and Characterization of Two Phytases from Escherichia coli," <i>Arch. Biochem. Biophys.</i> 303:107-113 (1993)			
	136	HAN et al., "Development of Phytase Overexpressing Microbes for Nutritional Use," Poster Presentation at Cornell University's Biotechnology Symposium, Ithaca, New York (October 15, 1997)			
	137	JIA et al., "Purification, Crystallization and Preliminary X-ray Analysis of the <i>Escherichia coli</i> Phytase," <i>Acta Cryst.</i> D54:647-649 (1998)			
	138	KANAI et al., "Recombinant Thermostable Cycloinulo-oligosaccharide Fructanotransferase Produced by <i>Saccharomyces cerevisiae</i> ," <i>Appl. Environ. Microbiol.</i> 63(12):4956-4960 (1997)			
	139	KEROVUO et al., "Isolation, Characterization, Molecular Gene Cloning, and Sequencing of a Novel Phytase from <i>Bacillus subtilis</i> ," <i>Appl. Environ. Microbiol.</i> 64(6):2079-2085 (1998)			
	140	KIM et al., "Cloning of the Thermostable Phytase Gene ( <i>phy</i> ) from <i>Bacillus</i> sp. DS11 and its Overexpression in <i>Escherichia coli</i> ," <i>FEMS Microbiol. Lett.</i> 162:185-191 (1998)			
	141	KONIETZNY et al., "Model Systems for Developing Detection Methods for Foods Deriving from Genetic Engineering," <i>J. Food Comp. Anal.</i> 10:28-35 (1997)			
	142	KUMAGAI et al., "Conversion of Starch to Ethanol in a Recombinant <i>Saccharomyces cerevisiae</i> Strain Expressing Rice $\alpha$ -amylase from a Novel <i>Pichia pastoris</i> Alcohol Oxidase Promoter," <i>Biotechnol.</i> 11:606-610 (1993)			
Examiner Signature				Date Considered	

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)				Application Number	10/662,914
				Filing Date	September 15, 2003
				First Named Inventor	LEI et al.
				Art Unit	1652
				Examiner Name	Mohammed Meah
Sheet	6	of	8	Attorney Docket Number	19603/4261 (CRF D-2895-02)
<b>OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS</b>					
	143	LEESON et al., "Efficacy of New Bacterial Phytase in Poultry Diets," <i>Can. J. Anim. Sci.</i> 80:527-528 (2000)			
	144	LEI et al., "Biotechnological Developments of Effective Phytases for Mineral Nutrition and Environmental Protection," <i>Appl. Microbiol. Biotech.</i> 57(4):474-481 (2001)			
	145	LIM et al., "Crystal Structure of <i>Escherichia coli</i> Phytase and its Complex with Phytate," <i>Nat. Struct. Biol.</i> 7(2): 108-113 (2000)			
	146	LIM et al., "Studies of Reaction Kinetics in Relation to the T <sub>g</sub> ' of Polymers in Frozen Model Systems," in Levine, eds., <i>Water Relationships in Food</i> , New York, NY:Plenum Press, pp. 103-122 (1991)			
	147	LOZANO et al., "Effect of Polyols on α-Chymotrypsin Thermostability: A Mechanistic Analysis of the Enzyme Stabilization," <i>J. Biotechnol.</i> 35:9-18 (1994)			
	148	LOZANO et al., "Influence of Polyhydroxylic Cosolvents on Papain Thermostability," <i>Enzyme Microb. Technol.</i> 15:868-873 (1993)			
	149	MAUGENEST et al., "Cloning and Characterization of cDNA Encoding a Maize Seedling Phytase," <i>Biochem. J.</i> 322:511-517 (1997)			
	150	MELDGAARD et al., "Different Effects of N-Glycosylation on the Thermostability of Highly Homologous Bacterial (1,3-1,4)-β-Glucanases Secreted from Yeast," <i>Microbiol.</i> 140(1):159-166 (1994)			
	151	MINAMIGUCHI et al., "Secretive Expression of the <i>Aspergillus aculeatus</i> Cellulase (FI-CM Case) by <i>Saccharomyces cerevisiae</i> ," <i>J. Ferment. Bioengin.</i> 79(4):363-366 (1995)			
	152	MOORE et al., "Molecular Cloning, Expression and Evaluation of Phosphohydrolases for Phytate-Degrading Activity," <i>J. Industrial Microbiol.</i> 14:396-402 (1995)			
	153	MURRAY et al., "Construction of Artificial Chromosomes in Yeast," <i>Nature</i> 305:189-193 (1983)			
	154	MURRY et al., "The Effect of Microbial Phytase in a Pearl Millet-Soybean Meal Diet on Apparent Digestibility and Retention of Nutrients, Serum Mineral Concentration, and Bone Mineral Density of Nursery Pigs," <i>J. Animal Sci.</i> 75:1284-1291 (1997)			
	155	NOVOZYMES A/S, Opposition Brief for European Patent No. EP 1-090-129 (19 pages) (November 2006)			
Examiner Signature				Date Considered	

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO				<b>Complete if Known</b>		
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)				Application Number		10/662,914
				Filing Date		September 15, 2003
				First Named Inventor		LEI et al.
				Group Art Unit		1652
				Examiner Name		Mohammed Meah
Sheet	7	of	8	Attorney Docket Number		19603/4261 (CRF D-2895-02)
<b>OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS</b>						
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.				T <sup>2</sup>
	156	PHILLIPPY et al., "Expression of an <i>Aspergillus niger</i> Phytase ( <i>phyA</i> ) in <i>Escherichia coli</i> ," <i>J. Agric. Food Chem.</i> 45(8):3337-3342 (1997)				
	157	PIDDINGTON et al., "The Cloning and Sequencing of the Genes Encoding Phytase ( <i>phy</i> ) and pH 2.5-Optimum Acid Phosphatase ( <i>aph</i> ) From <i>Aspergillus niger</i> var. <i>awamori</i> ," <i>Gene</i> 133:55-62 (1993)				
	158	RODRIGUEZ et al., "Cloning, Sequencing, and Expression of an <i>Escherichia coli</i> Acid Phosphatase/Phytase Gene ( <i>appA2</i> ) Isolated from Pig Colon," <i>Biochem. Biophys. Res. Comm.</i> 257:117-123 (1999)				
	159	RODRIGUEZ et al., "Different Sensitivity of Recombinant <i>Aspergillus niger</i> Phytase (r-PhyA) and <i>Escherichia coli</i> pH 2.5 Acid Phosphatase (r-AppA) to Trypsin and Pepsin <i>In vitro</i> ," <i>Arch. Biochem. Biophys.</i> 365(2):262-267 (1999)				
	160	ROSSI et al., "Stabilization of the Restriction Enzyme <i>EcoRI</i> Dried with Trehalose and Other Selected Glass-Forming Solutes," <i>Biotechnol. Prog.</i> 13:609-616 (1997)				
	161	SCHEBOR et al., "Glassy State and Thermal Inactivation of Invertase and Lactase in Dried Amorphous Matrices," <i>Biotechnol. Prog.</i> 13:857-863 (1997)				
	162	SCOTT et al., "The Effect of Phosphorus, Phytase Enzyme, and Calcium on the Performance of Layers Fed Corn-Based Diets," <i>Poultry Sci.</i> 78:1742-1749 (1999)				
	163	SEBASTIAN et al., "Apparent Digestibility of Protein and Amino Acids in Brioler Chickens Fed a Corn-Soybean Diet Supplemented with Microbial Phytase," <i>Poultry Sci.</i> 76:1760-1769 (1997)				
	164	SIDHU et al., "Analysis of $\alpha$ -Factor Secretion Signals by Fusing with Acid Phosphatase of Yeast," <i>Gene</i> 54:175-184 (1987)				
	165	SUN et al., "Expression of <i>Aspergillus niger</i> Phytase in Yeast <i>Saccharomyces cerevisiae</i> for Poultry Diet Supplementation," <i>Poultry Sci.</i> 76(Suppl. 1):5 (1997)				
	166	TAKAHASHI et al., "Independent Production of Two Molecular Forms of a Recombinant <i>Rhizopus oryzae</i> Lipase by <i>KEX2</i> -Engineered Strains of <i>Saccharomyces cerevisiae</i> ," <i>Appl. Microbiol. Biotechnol.</i> 52(4):534-540 (1999)				
	167	TERASHIMA et al., "The Roles of the N-Linked Carbohydrate Chain of Rice $\alpha$ -amylase in Thermostability and Enzyme Kinetics," <i>Eur. J. Biochem.</i> 226:249-254 (1994)				
Examiner Signature					Date Considered	

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

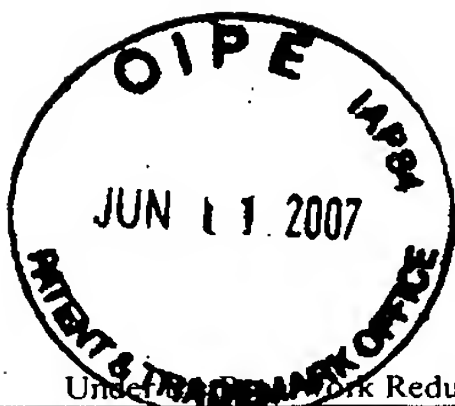


Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)				Application Number	10/662,914
				Filing Date	September 15, 2003
				First Named Inventor	LEI et al.
				Art Unit	1652
				Examiner Name	Mohammed Meah
Sheet	8	of	8	Attorney Docket Number	19603/4261 (CRF D-2895-02)
<b>OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS</b>					
	168	TOUATI et al., "Pleiotropic Mutations in <i>appR</i> Reduce pH 2.5 Acid Phosphatase Expression and Restore Succinate Utilisation in CRP-Deficient Strains of <i>Escherichia coli</i> ," <i>Mol. Gen. Genet.</i> 202:257-264 (1986)			
	169	TSCHOPP et al., "Heterologous Gene Expression in Methylophilic Yeast," <i>Biotechnol.</i> 18:305-322 (1991)			
	170	ULLAH, A.H.J., "Aspergillus Ficum Phytase: Partial Primary Structure, Substrate Selectivity, and Kinetic Characterization," <i>Prep. Biochem.</i> 18(4):459-471 (1988)			
	171	VERWOERD et al., "Stable Accumulation of <i>Aspergillus niger</i> Phytase in Transgenic Tobacco Leaves," <i>Plant Physiol.</i> 109:1199-1205(1995)			
	172	YAO et al., "Recombinant <i>Pichia pastoris</i> Overexpressing Bioactive Phytase," <i>Science in China Series C. Life Sciences</i> 41(3):330-336 (1998)			
	173	ZVONOK et al., "Construction of Versatile <i>Escherichia coli</i> -Yeast Shuttle Vectors for Promoter Testing in <i>Saccharomyces cerevisiae</i> ," <i>Gene</i> 66(2):313-318 (1988)			
	174	ULLAH et al., "Differences in the Active Site Environment of <i>Aspergillus ficum</i> Phytases," <i>Biochem. Biophys. Res. Comm.</i> 243:458-462 (1998)			
Examiner Signature				Date Considered	

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.



PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Trademark Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	10/662,914
				Filing Date	September 15, 2003
				First Named Inventor	LEI et al.
				Art Unit	1652
				Examiner Name	Mohammed Meah
Sheet	1	of	8	Attorney Docket Number	19603/4261 (CRF D-2895-02)
U.S. PATENT DOCUMENTS					
Examiner Initials <sup>5</sup>	Cite No. <sup>1</sup>	U.S. Patent Document Number - Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	US-2001/0018197 A1	08-30-2001	WONG et al.	
	2	US-2001/0029042 A1	10-11-2001	FOUACHE et al.	
	3	US-2003/0206913 A1	11-06-2003	WEBEL et al.	
	4	US-2005/0095691 A1	05-05-2005	LEI	
	5	US-2006/0153902 A1	07-13-2006	LEI	
	6	US-3,819,528	06-25-1974	BERRY	
	7	US-3,860,484	01-14-1975	O'MALLEY	
	8	US-3,966,971	06-29-1976	MOREHOUSE et al.	
	9	US-4,038,140	07-26-1977	JAWOREK et al.	
	10	US-4,375,514	03-01-1983	SIEWERT et al.	
	11	US-4,460,683	07-17-1984	GLOGER et al.	
	12	US-4,470,968	09-11-1984	MITRA et al.	
	13	US-4,734,283	03-29-1988	SIREN	
	14	US-4,765,994	08-23-1988	HOLMGREN	
	15	US-4,778,761	10-18-1988	MIYANO HARAHARA et al.	
	16	US-4,914,029	04-03-1990	CARANSA et al.	
	17	US-4,915,960	04-10-1990	HOLMGREN	
	18	US-4,950,609	08-21-1990	TISCHER et al.	
	19	US-4,997,767	03-05-1991	NOZAKI et al.	
	20	US-5,024,941	06-18-1991	MAINE et al.	
	21	US-5,200,399	04-06-1993	WETT LAUFER et al.	
	22	US-5,268,273	12-07-1993	BUCKHOLZ	
	23	US-5,290,765	03-01-1994	WETT LAUFER et al.	
	24	US-5,316,770	05-31-1994	EDWARDS, JR.	
	25	US-5,318,903	06-07-1994	BEWERT et al.	
	26	US-5,366,736	11-22-1994	EDWARDS, JR.	
	27	US-5,480,790	01-02-1996	TISCHER et al.	
	28	US-5,492,821	02-20-1996	CALLSTROM et al.	
	29	US-5,516,525	05-14-1996	EDWARDS, JR.	
	30	US-5,554,399	09-10-1996	VANDERBEKE et al.	
	31	US-5,556,771	09-17-1996	SHEN et al.	
	32	US-5,612,055	03-18-1997	BEDFORD et al.	
	33	US-5,691,154	11-25-1997	CALLSTROM et al.	
	34	US-5,716,655	02-10-1998	HAMSTRA et al.	
	35	US-5,736,625	04-07-1998	CALLSTROM et al.	
	36	US-5,827,709	10-27-1998	BARENDSE et al.	
	37	US-5,830,696	11-03-1998	SHORT	
	38	US-5,830,733	11-03-1998	NEVALAINEN et al.	
	39	US-5,853,779	12-29-1998	TAKEBE et al.	
	40	US-5,876,997	03-02-1999	KRETZ	
Examiner Signature				Date Considered	

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at 222.uspto.gov or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				Application Number	10/662,914
				Filing Date	September 15, 2003
				First Named Inventor	LEI et al.
				Group Art Unit	1652
				Examiner Name	Mohammed Meah
Sheet	2	of	8	Attorney Docket Number	19603/4261 (CRF D-2895-02)

U.S. PATENT DOCUMENTS					
Examiner Initials <sup>*</sup>	Cite No. <sup>1</sup>	U.S. Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code <sup>2</sup> (if known)			
	41	US-5,891,708	04-06-1999	SANIEZ et al.	
	42	US-5,900,525	05-04-1999	AUSTIN-PHILLIPS et al.	
	43	US-5,902,615	05-11-1999	SANIEZ et al.	
	44	US-5,935,624	08-10-1999	DELUCA et al.	
	45	US-5,955,448	09-21-1999	COLACO et al.	
	46	US-5,972,669	10-26-1999	HARZ et al.	
	47	US-5,985,605	11-16-1999	CHENG et al.	
	48	US-5,989,600	11-23-1999	NIELSEN et al.	
	49	US-6,022,555	02-08-2000	DELUCA et al.	
	50	US-6,039,942	03-21-2000	LASSEN et al.	
	51	US-6,063,431	05-16-2000	BAE et al.	
	52	US-6,083,541	07-04-2000	HAMSTRA et al.	
	53	US-6,110,719	08-29-2000	KRETZ	
	54	US-6,139,892	10-31-2000	FREDLUND et al.	
	55	US-6,139,902	10-31-2000	KONDO et al.	
	56	US-6,140,077	10-31-2000	NAKAMURA et al.	
	57	US-6,183,740 B1	02-06-2001	SHORT et al.	
	58	US-6,190,897 B1	02-20-2001	KRETZ	
	59	US-6,204,012 B1	03-20-2001	HELLMUTH et al.	
	60	US-6,248,938 B1	06-19-2001	AUSTIN-PHILLIPS et al.	
	61	US-6,261,592 B1	07-17-2001	NAGASHIMA et al.	
	62	US-6,264,946 B1	07-24-2001	MÜLLERTZ et al.	
	63	US-6,274,178 B1	08-14-2001	BEVEN et al.	
	64	US-6,277,623 B1	08-21-2001	OH et al.	
	65	US-6,284,502 B1	09-04-2001	MAENZ et al.	
	66	US-6,291,221 B1	09-18-2001	VAN LOON et al.	
	67	US-6,451,572 B1	09-17-2002	LEI	
	68	US-6,511,699 B1	01-28-2003	LEI	
	69	US-6,841,370 B1	01-11-2005	LEI	
	70	US-6,974,690 B2	12-13-2005	LEI	
	71	US-7,026,150 B2	04-11-2006	LEI	

FOREIGN PATENT DOCUMENTS						
Examiner Initials <sup>*</sup>	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
	72	CN 1126243 A	07-10-1996	MITCHELL et al.		
	73	EP 0 449 376 A2	10-02-1991	PEN et al.		
	74	EP 0 556 883 A1	08-25-1993	HAMSTRA et al.		
	75	EP 0 649 600 A1	04-26-1995	TAKEBE et al.		
	76	EP 0 699 762A2	03-06-1996	MOCHIZUKI et al.		
Examiner Signature				Date Considered		

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at 222.uspto.gov or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>			
				Application Number		10/662,914	
				Filing Date		September 15, 2003	
				First Named Inventor		LEI et al.	
				Art Unit		1652	
				Examiner Name		Mohammed Meah	
Sheet	3	of	8	Attorney Docket Number		19603/4261 (CRF D-2895-02)	
<b>FOREIGN PATENT DOCUMENTS</b>							
Examiner Initials <sup>6</sup>	Cite No. <sup>1</sup>	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup>	Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
	77	EP 0 772 978 B1		05-14-1997	BENDIXEN et al.		
	78	EP 0 779 037 A1		06-18-1997	VAN PARIDON et al.		
	79	EP 0 897 010 A2		02-17-1999	KOSTREWA et al.		
	80	EP 0 897 985 A2		02-24-1999	LEHMANN, Martin		
	81	EP 0 909 821 A2		04-21-1999	BORNSCHEUER et al.		
	82	EP 0 925 723 A1		06-30-1999	BUURMAN et al.		
	83	EP 0 955 362 A1		11-10-1999	NAGASHIMA et al.		
	84	EP 0 960 934 A1		12-01-1999	NAGASHIMA et al.		
	85	GB 2 286 396 A		08-16-1995	WILLIAMS, Peter		
	86	GB 2 316 082A		02-18-1998	APAJALAHTI et al.		
	87	WO 90/03431 A1		04-05-1990	BRIERLEY et al.		
	88	WO 90/05182 A1		05-17-1990	GIBSON et al.		
	89	WO 91/14773 A2		10-03-1991	GIBSON et al.		
	90	WO 91/14782 A1		10-03-1991	PEN et al.		
	91	WO 93/14645 A1		08-05-1993	HAMSTRA et al.		
	92	WO 93/16175 A1		08-19-1993	BARENDSE et al.		
	93	WO 93/19759 A1		10-14-1993	EDWARDS et al.		
	94	WO 94/03072 A1		02-17-1994	PALOHEIMO et al.		
	95	WO 94/03612 A1		02-17-1994	NEVALAINEN et al.		
	96	WO 97/16076 A1		05-09-1997	GIBSON et al.		
	97	WO 97/35017 A1		09-25-1997	BERKA et al.		
	98	WO 97/39638 A1		10-30-1997	MÜLLERTZ et al.		
	99	WO 97/45009 A2		12-04-1997	BRONSHTEIN		
	100	WO 97/48812 A3		12-24-1997	CHENG et al.		
	101	WO 98/05785 A1		02-12-1998	MAUGENEST et al.		
	102	WO 98/06856 A1		02-19-1998	APAJALAHTI et al.		
	103	WO 98/20139 A2		05-14-1998	MORGAN et al.		
	104	WO 98/30681 A1		07-16-1998	OHMANN et al.		
	105	WO 98/44125 A1		10-08-1998	OH et al.		
	106	WO 98/54980 A2		12-10-1998	BARENDSE et al.		
	107	WO 99/08539 A1		02-25-1999	KRETZ, Keith		
	108	WO 99/49740 A1		10-07-1999	BEUDEKER et al.		
	109	WO 00/10404 A2		03-02-2000	MAENZ et al.		
	110	WO 00/20569 A1		04-13-2000	HENRIKSEN et al.		
	111	WO 00/41509 A2		07-20-2000	YAVER et al.		
	112	WO 00/47060 A1		08-17-2000	ANDELA et al.		
	113	WO 00/58481 A2		10-05-2000	LEI		
	114	WO 00/71728 A1		11-30-2000	SHORT et al.		
	115	WO 00/72700 A1		12-07-2000	BARCLAY et al.		
	116	WO 01/36607 A1		05-25-2001	LEI		
	117	WO 01/58275 A2		08-16-2001	OESTERGAARD et al.		
	118	WO 01/58276 A2		08-16-2001	KLUENTER et al.		
Examiner Signature				Date Considered			

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at 222.uspto.gov or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.



Substitute for form 1449B/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)				Application Number	10/662,914
				Filing Date	September 15, 2003
				First Named Inventor	LEI et al.
				Group Art Unit	1652
				Examiner Name	Mohammed Meah
Sheet	4	of	8	Attorney Docket Number	19603/4261 (CRF D-2895-02)
<b>OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS</b>					
Examiner Initials <sup>*</sup>	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T <sup>2</sup>
	119	ATLUNG et al., "Role of the Transcriptional Activator AppY in Regulation of the <i>cyx appA</i> Operon of <i>Escherichia coli</i> by Anaerobiosis, Phosphate Starvation, and Growth Phase," <i>J. Bacteriol.</i> 176(17):5414-5422 (1994)			
	120	ATCC Catalog for Yeasts, 19 <sup>th</sup> Edition (1995)			
	121	BELIN et al., "A Pleiotropic Acid Phosphatase-Deficient Mutant of <i>Escherichia coli</i> Shows Premature Termination in the <i>dsbA</i> Gene. Use of <i>dsbA::phoA</i> Fusions to Localize a Structurally Important Domain in DsbA," <i>Mol. Gen. Genet.</i> 242:23-32 (1994)			
	122	BLONDEAU et al., "Development of High-Cell-Density Fermentation for Heterologous Interleukin 1 $\beta$ Production in <i>Kluyveromyces lactis</i> Controlled by the PHO5 Promoter," <i>Appl. Microbiol. Biotechnol.</i> 41:324-329 (1994)			
	123	BOCTOR et al., "Enhancement of the Stability of Thrombin by Polyols: Microcalorimetric Studies," <i>J. Pharm. Pharmacol.</i> 44:600-603 (1992)			
	124	BOER et al., "Characterization of <i>Trichoderma reesei</i> Cellobiohydrolase Cel7a Secreted from <i>Pichia pastoris</i> Using Two Different Promoters," <i>Biotechnol. Bioengin.</i> 69(5):486-494 (2000)			
	125	BRONDSTED et al., "Effect of Growth Conditions on Expression of the Acid Phosphatase ( <i>cyx-appA</i> ) Operon and the <i>appY</i> Gene, Which Encodes a Transcriptional Activator of <i>Escherichia coli</i> ," <i>J. Bacteriol.</i> 178(6):1556-1564 (1996)			
	126	CHIARUGI et al., "Differential Role of Four Cysteines on the Activity of a Low <i>M<sub>r</sub></i> Phosphotyrosine Protein Phosphatase," <i>FEBS Lett.</i> 310(1):9-12 (1992)			
	127	DASSA et al., "Identification of the Gene <i>appA</i> for the Acid Phosphatase (pH Optimum 2.5) of <i>Escherichia coli</i> ," <i>Mol. Gen. Genet.</i> 200:68-73 (1985)			
	128	DASSA et al., "The Complete Nucleotide Sequence of the <i>Escherichia coli</i> Gene <i>appA</i> Reveals Significant Homology Between pH 2.5 Acid Phosphatase and Glucose-1-Phosphatase," <i>J. Bacteriol.</i> 172(9):5497-5500 (1990)			
	129	DATABASE ACCESSION NO. B36733, corresponding to Greiner et al., <i>Arch. Biochem. Biophys.</i> 303:107-113 (1993)			
	130	DIVAKARAN et al., "In vitro Studies on the Interaction of Phytase with Trypsin and Amylase Extracted from Shrimp ( <i>Penaeus vannamei</i> ) Hepatopancreas," <i>J. Agric. Food Chem.</i> 46:4973-4976 (1998)			
Examiner Signature				Date Considered	

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO				<b>Complete if Known</b>		
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)				Application Number		10/662,914
				Filing Date		September 15, 2003
				First Named Inventor		LEI et al.
				Group Art Unit		1652
				Examiner Name		Mohammed Meah
Sheet	5	of	8	Attorney Docket Number		19603/4261 (CRF D-2895-02)
<b>OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS</b>						
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.				T <sup>2</sup>
	131	DSM Nutritional Products, Opposition Brief for European Patent No. EP 1-090-129 (10 pages) (November 15, 2006)				
	132	GOLOVAN et al., "Characterization and Overproduction of the E. coli appA Encoded Biofunctional Enzyme the Exhibits Both Phytase and Acid Phosphatase Activities," <i>Can. J. Microbiol.</i> 46:59-71 (2000)				
	133	GRANOVSKII et al., "Expression of Hepatitis B Virus HBsAg Gene in Yeast Cells Under Control of Promotor Region of PHO5 Gene," <i>Soviet Progress in Virology</i> 5:45-47 (1985)				
	134	GREINER et al., "Purification and Characterization of a Phytase from Klebsiella terrigena," <i>Arch. Biochem. Biophys.</i> 341(2):201-206 (1997)				
	135	GREINER et al., "Purification and Characterization of Two Phytases from Escherichia coli," <i>Arch. Biochem. Biophys.</i> 303:107-113 (1993)				
	136	HAN et al., "Development of Phytase Overexpressing Microbes for Nutritional Use," Poster Presentation at Cornell University's Biotechnology Symposium, Ithaca, New York (October 15, 1997)				
	137	JIA et al., "Purification, Crystallization and Preliminary X-ray Analysis of the <i>Escherichia coli</i> Phytase," <i>Acta Cryst.</i> D54:647-649 (1998)				
	138	KANAI et al., "Recombinant Thermostable Cycloinulo-oligosaccharide Fructanotransferase Produced by <i>Saccharomyces cerevisiae</i> ," <i>Appl. Environ. Microbiol.</i> 63(12):4956-4960 (1997)				
	139	KEROVUO et al., "Isolation, Characterization, Molecular Gene Cloning, and Sequencing of a Novel Phytase from <i>Bacillus subtilis</i> ," <i>Appl. Environ. Microbiol.</i> 64(6):2079-2085 (1998)				
	140	KIM et al., "Cloning of the Thermostable Phytase Gene ( <i>phy</i> ) from <i>Bacillus</i> sp. DS11 and its Overexpression in <i>Escherichia coli</i> ," <i>FEMS Microbiol. Lett.</i> 162:185-191 (1998)				
	141	KONIETZNY et al., "Model Systems for Developing Detection Methods for Foods Deriving from Genetic Engineering," <i>J. Food Comp. Anal.</i> 10:28-35 (1997)				
	142	KUMAGAI et al., "Conversion of Starch to Ethanol in a Recombinant <i>Saccharomyces cerevisiae</i> Strain Expressing Rice $\alpha$ -amylase from a Novel <i>Pichia pastoris</i> Alcohol Oxidase Promoter," <i>Biotechnol.</i> 11:606-610 (1993)				
Examiner Signature					Date Considered	

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>				
				Application Number		10/662,914		
				Filing Date		September 15, 2003		
				First Named Inventor		LEI et al.		
				Art Unit		1652		
				Examiner Name		Mohammed Meah		
Sheet	6	of	8	Attorney Docket Number		19603/4261 (CRF D-2895-02)		
<b>OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS</b>								
	143	LEESON et al., "Efficacy of New Bacterial Phytase in Poultry Diets," <i>Can. J. Anim. Sci.</i> 80:527-528 (2000)						
	144	LEI et al., "Biotechnological Developments of Effective Phytases for Mineral Nutrition and Environmental Protection," <i>Appl. Microbiol. Biotech.</i> 57(4):474-481 (2001)						
	145	LIM et al., "Crystal Structure of <i>Escherichia coli</i> Phytase and its Complex with Phytate," <i>Nat. Struct. Biol.</i> 7(2): 108-113 (2000)						
	146	LIM et al., "Studies of Reaction Kinetics in Relation to the T <sub>g</sub> ' of Polymers in Frozen Model Systems," in Levine, eds., <i>Water Relationships in Food</i> , New York, NY:Plenum Press, pp. 103-122 (1991)						
	147	LOZANO et al., "Effect of Polyols on $\alpha$ -Chymotrypsin Thermostability: A Mechanistic Analysis of the Enzyme Stabilization," <i>J. Biotechnol.</i> 35:9-18 (1994)						
	148	LOZANO et al., "Influence of Polyhydroxylic Cosolvents on Papain Thermostability," <i>Enzyme Microb. Technol.</i> 15:868-873 (1993)						
	149	MAUGENEST et al., "Cloning and Characterization of cDNA Encoding a Maize Seedling Phytase," <i>Biochem. J.</i> 322:511-517 (1997)						
	150	MELDGAARD et al., "Different Effects of N-Glycosylation on the Thermostability of Highly Homologous Bacterial (1,3-1,4)- $\beta$ -Glucanases Secreted from Yeast," <i>Microbiol.</i> 140(1):159-166 (1994)						
	151	MINAMIGUCHI et al., "Secretive Expression of the <i>Aspergillus aculeatus</i> Cellulase (FI-CM Case) by <i>Saccharomyces cerevisiae</i> ," <i>J. Ferment. Bioengin.</i> 79(4):363-366 (1995)						
	152	MOORE et al., "Molecular Cloning, Expression and Evaluation of Phosphohydrolases for Phytate-Degrading Activity," <i>J. Industrial Microbiol.</i> 14:396-402 (1995)						
	153	MURRAY et al., "Construction of Artificial Chromosomes in Yeast," <i>Nature</i> 305:189-193 (1983)						
	154	MURRY et al., "The Effect of Microbial Phytase in a Pearl Millet-Soybean Meal Diet on Apparent Digestibility and Retention of Nutrients, Serum Mineral Concentration, and Bone Mineral Density of Nursery Pigs," <i>J. Animal Sci.</i> 75:1284-1291 (1997)						
	155	NOVOZYMES A/S, Opposition Brief for European Patent No. EP 1-090-129 (19 pages) (November 2006)						
Examiner Signature					Date Considered			

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)				Application Number	10/662,914
				Filing Date	September 15, 2003
				First Named Inventor	LEI et al.
				Group Art Unit	1652
				Examiner Name	Mohammed Meah
Sheet	7	of	8	Attorney Docket Number	19603/4261 (CRF D-2895-02)
<b>OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS</b>					
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T <sup>2</sup>
	156	PHILLIPPY et al., "Expression of an <i>Aspergillus niger</i> Phytase ( <i>phyA</i> ) in <i>Escherichia coli</i> ," <i>J. Agric. Food Chem.</i> 45(8):3337-3342 (1997)			
	157	PIDDINGTON et al., "The Cloning and Sequencing of the Genes Encoding Phytase ( <i>phy</i> ) and pH 2.5-Optimum Acid Phosphatase ( <i>aph</i> ) From <i>Aspergillus niger</i> var. <i>awamori</i> ," <i>Gene</i> 133:55-62 (1993)			
	158	RODRIGUEZ et al., "Cloning, Sequencing, and Expression of an <i>Escherichia coli</i> Acid Phosphatase/Phytase Gene ( <i>appA2</i> ) Isolated from Pig Colon," <i>Biochem. Biophys. Res. Comm.</i> 257:117-123 (1999)			
	159	RODRIGUEZ et al., "Different Sensitivity of Recombinant <i>Aspergillus niger</i> Phytase (r-PhyA) and <i>Escherichia coli</i> pH 2.5 Acid Phosphatase (r-AppA) to Trypsin and Pepsin <i>In vitro</i> ," <i>Arch. Biochem. Biophys.</i> 365(2):262-267 (1999)			
	160	ROSSI et al., "Stabilization of the Restriction Enzyme <i>EcoRI</i> Dried with Trehalose and Other Selected Glass-Forming Solutes," <i>Biotechnol. Prog.</i> 13:609-616 (1997)			
	161	SCHEBOR et al., "Glassy State and Thermal Inactivation of Invertase and Lactase in Dried Amorphous Matrices," <i>Biotechnol. Prog.</i> 13:857-863 (1997)			
	162	SCOTT et al., "The Effect of Phosphorus, Phytase Enzyme, and Calcium on the Performance of Layers Fed Corn-Based Diets," <i>Poultry Sci.</i> 78:1742-1749 (1999)			
	163	SEBASTIAN et al., "Apparent Digestibility of Protein and Amino Acids in Brioler Chickens Fed a Corn-Soybean Diet Supplemented with Microbial Phytase," <i>Poultry Sci.</i> 76:1760-1769 (1997)			
	164	SIDHU et al., "Analysis of $\alpha$ -Factor Secretion Signals by Fusing with Acid Phosphatase of Yeast," <i>Gene</i> 54:175-184 (1987)			
	165	SUN et al., "Expression of <i>Aspergillus niger</i> Phytase in Yeast <i>Saccharomyces cerevisiae</i> for Poultry Diet Supplementation," <i>Poultry Sci.</i> 76(Suppl. 1):5 (1997)			
	166	TAKAHASHI et al., "Independent Production of Two Molecular Forms of a Recombinant <i>Rhizopus oryzae</i> Lipase by <i>KEX2</i> -Engineered Strains of <i>Saccharomyces cerevisiae</i> ," <i>Appl. Microbiol. Biotechnol.</i> 52(4):534-540 (1999)			
	167	TERASHIMA et al., "The Roles of the N-Linked Carbohydrate Chain of Rice $\alpha$ -amylase in Thermostability and Enzyme Kinetics," <i>Eur. J. Biochem.</i> 226:249-254 (1994)			
Examiner Signature				Date Considered	

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)				Application Number	10/662,914
				Filing Date	September 15, 2003
				First Named Inventor	LEI et al.
				Art Unit	1652
				Examiner Name	Mohammed Meah
Sheet	8	of	8	Attorney Docket Number	19603/4261 (CRF D-2895-02)
<b>OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS</b>					
	168	TOUATI et al., "Pleiotropic Mutations in <i>appR</i> Reduce pH 2.5 Acid Phosphatase Expression and Restore Succinate Utilisation in CRP-Deficient Strains of <i>Escherichia coli</i> ," <i>Mol. Gen. Genet.</i> 202:257-264 (1986)			
	169	TSCHOPP et al., "Heterologous Gene Expression in Methylophilic Yeast," <i>Biotechnol.</i> 18:305-322 (1991)			
	170	ULLAH, A.H.J., "Aspergillus Ficum Phytase: Partial Primary Structure, Substrate Selectivity, and Kinetic Characterization," <i>Prep. Biochem.</i> 18(4):459-471 (1988)			
	171	VERWOERD et al., "Stable Accumulation of <i>Aspergillus niger</i> Phytase in Transgenic Tobacco Leaves," <i>Plant Physiol.</i> 109:1199-1205(1995)			
	172	YAO et al., "Recombinant <i>Pichia pastoris</i> Overexpressing Bioactive Phytase," <i>Science in China Series C. Life Sciences</i> 41(3):330-336 (1998)			
	173	ZVONOK et al., "Construction of Versatile <i>Escherichia coli</i> -Yeast Shuttle Vectors for Promoter Testing in <i>Saccharomyces cerevisiae</i> ," <i>Gene</i> 66(2):313-318 (1988)			
	174	ULLAH et al., "Differences in the Active Site Environment of <i>Aspergillus ficum</i> Phytases," <i>Biochem. Biophys. Res. Comm.</i> 243:458-462 (1998)			
Examiner Signature				Date Considered	

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.